

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is proposed to be amended as follows:

**PART 90—CONTROL OF EMISSIONS FROM NONROAD SPARK-IGNITION
ENGINES**

1. The proposed authority citation for part 90 continues to read as follows:

Authority: Sections 202, 203, 204, 205, 206, 207, 208, 209, 213, 215, 216, and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7521, 7522, 7523, 7524, 7525, 7541, 7542, 7543, 7547, 7549, 7550, and 7601(a)).

Subpart A - General

1a. Section 90.1 is proposed to be amended by adding a second sentence to paragraph (a) to read as follows:

§ 90.1 Applicability.

(a) * * * To the extent permitted by other parts of this Chapter, this Part may, at the engine manufacturer's option, apply to engines with gross power output greater than 19 kW that have an engine displacement of less than or equal to one liter.

* * * * *

2. Section 90.3 is proposed to be amended by revising the definitions of "phase 2 engine," "small volume engine family," "small volume engine manufacturer," "small volume equipment manufacturer," and "small volume equipment model" to read as follows:

§ 90.3 Definitions.

* * * * *

Phase 2 engine means any handheld or nonhandheld engine that was produced under a certificate of conformity under the regulations in this part to the standards defined for Phase 2 engines.

* * * * *

Small volume engine family means * * *; or any handheld engine family whose eligible production in a given model year are projected at the time of certification to be no more than 5,000 engines.

Small volume engine manufacturer means * * *; and, for handheld engines, any engine manufacturer whose total eligible production of handheld engines are projected at the time of certification of a given model year to be no more than 25,000 handheld engines.

Small volume equipment manufacturer means * * *. For handheld equipment, the term “small volume equipment manufacturer” has the same meaning except that it is limited to 25,000 pieces of handheld equipment rather than 5,000 pieces of nonhandheld equipment.

Small volume equipment model means * * *. For handheld equipment, the term “small volume equipment model” has the same meaning except that it is limited to 2,500 pieces of handheld equipment, rather than 500 pieces of nonhandheld equipment.

* * * * *

Subpart B -- Emission Standards and Certification Provisions

3. Section 90.103 is proposed to be amended by revising Table 2 and adding Table 4 to paragraph (a) introductory text, to read as follows:

§90.103 Exhaust emission standards.

(a) * * *

TABLE 2 Phase 2 Class I-A, Class I-B, and Class I Engine Exhaust Emission Standards
(grams per kilowatt-hour)

Engine Class	HC+NO _x	NMHC + NO _x	CO	Effective Date
I-A	50	---	610	2000 Model Year
I-B	40	37	610	2000 Model Year
* * *	* * *	* * *	* * *	* * *

* * *

TABLE 4 Phase 2 Handheld Exhaust Emission Standards by Model Year
(grams per kilowatt-hour)

Engine Class	Emission Requirement	Model Year						
		2002	2003	2004	2005	2006	2007	2008 and later
Class III	HC+NO _x	226	200	150	100	50	50	50
	CO	805	805	805	805	805	805	805
Class IV	HC+NO _x	187	168	129	89	50	50	50
	CO	805	805	805	805	805	805	805
Class V	HC+NO _x	---	---	138	129	110	91	72
	CO	---	---	603	603	603	603	603

* * * * *

4. Section 90.103 is proposed to be amended by revising the first and third sentences of paragraph (a)(6) and the first and third sentences of paragraph (a)(7) to read as follows:

§90.103 Exhaust emission standards.

(a) * * *

(6) * * * until the 2010 model year for nonhandheld engine families excluding Class I-A and Class I-B engine families, until the 2009 model year for Class III and Class IV engine families, and until the 2011 model year for Class V engine families. * * * Beginning with the 2010 model year for nonhandheld engine families, the 2009 model year for Class III and Class IV engine families, and the 2011 model year for Class V engine families, * * *.

(7) * * * until the 2010 model year for nonhandheld engine families excluding Class I-A and Class I-B engine families, until the 2009 model year for Class III and Class IV engine families, and until the 2011 model year for Class V engine families. * * * Beginning with the 2010 model year for nonhandheld engine families, the 2009 model year for Class III and Class IV engine families, and the 2011 model year for Class V engine families, * * *.

* * * * *

5. Section 90.104 is proposed to be amended by adding an additional sentence to paragraph (g)(1), by redesignating paragraph (g)(3) as paragraph (g)(4), by adding a new Table 2 in paragraph (g)(3), and by revising the introductory text of paragraph (h)(2) to read as follows:

§ 90.104 Compliance with emission standards.

* * * * *

(g)(1) * * * The provisions of this paragraph do not apply to Class I-A and Class I-B engines.

(2) * * *

(3) Table 2 follows:

Table 2: Handheld Engine HC+NO_x and CO Assigned Deterioration Factors
for Small Volume Manufacturers and Small Volume Engine Families

Engine Class	Two-stroke Engines		Four-stroke Engines		Engines with aftertreatment
	HC+NO _x	CO	HC+NO _x	CO	Dfs must be calculated using the formula in § 90.104(g)(4)
Class III	1.1	1.1	1.5	1.1	
Class IV	1.1	1.1	1.5	1.1	
Class V	1.1	1.1	1.5	1.1	

(4) * * *

(h)(1) * * *

(2) * * * or Table 2 of this section, dfs shall be determined as follows:

* * *

* * * * *

6. Section 90.105 is proposed to be amended by adding a second sentence to paragraph (a)(1), revising Table 1 of paragraph (a)(2), and adding new paragraphs (a)(3) and (a)(4) to read as follows:

§ 90.105 Useful life periods for Phase 2 engines.

(a) * * * Engines with gross power output greater than 19 kW that have an engine displacement less than or equal to one liter that optionally certify under this part as allowed in paragraph (a) of §90.1, must certify to a useful life period of 1,000 hours.

(2) Table 1 follows:

Table 1: Useful Life Categories for Nonhandheld Engines (hours)

Class I-A	50	125	300
Class I-B	125	250	500
* * *	* * *	* * *	* * *
* * *	* * *	* * *	* * *

(3) For handheld engines: Manufacturers shall select a useful life category from Table 2 of this section at the time of certification.

(4) Table 2 follows:

Table 2: Useful Life Categories for Handheld Engines (hours)

Class III	50	125	300
Class IV	50	125	300
Class V	50	125	300

* * * * *

7. Section 90.107 is proposed to be amended by adding new paragraph (d)(6)(vi) to read as follows:

§ 90.107 Application for certification.

* * * * *

(d) * * *

(6) * * *

(vi) Information relating to altitude kits to be certified, including: a description of the altitude kit; appropriate part numbers; the altitude ranges at which the kits must be installed on or removed from the engine for proper emissions and engine performance; statements to be included in the owner's manual for the engine/equipment combination (and other maintenance related literature) that declare the altitude ranges at which the kit must be installed or removed and that state that the operation of the engine/equipment at an altitude different from what it was certified at, for extended periods of time, and may increase emissions; and a statement that an engine with the altitude kit installed will meet each emission standard throughout its useful life (the rationale for this assessment must be documented and retained by the manufacturer, and

provided to the Administrator upon request).

* * * * *

8. Section 90.114 is proposed to be amended by adding a new second sentence of paragraph (f)(1), by redesignating and revising the existing second sentence of paragraph (f)(1) as the third sentence of paragraph (f)(1), by adding a new paragraph (f)(2), and by revising paragraph (f)(3) to read as follows:

§ 90.114 Requirement of certification--engine information label.

* * * * *

(f) * * *

(1) * * * For engines less than 66 cc, Category C= 50 hours, B= 125 hours and A = 300 hours. For engines equal to or greater than 66 cc but less than 225 cc displacement, * * *

(2) For handheld engines: The Emissions Compliance Period referred to on the Emissions Compliance label indicates the number of operating hours for which the engine has been shown to meet Federal emission requirements. Category C= 50 hours, B= 125 hours and A = 300 hours.

(3) The manufacturer must provide, in the same document as the statement in paragraph (f)(1) or (f)(2) of this section, * * *. The Administrator may approve alternate language to the statement in paragraph (f)(1) or (f)(2) of this section, * * *

9. Section 90.116 is proposed to be amended by redesignating paragraphs (b)(1), (2), (3), (4), and (5) as paragraphs (b)(3), (4), (5), (6), and (7), and by adding new paragraphs (b)(1) and (2), and revising paragraph (b)(3) to read as follows:

§ 90.116 Certification procedure--determining engine displacement, engine class, and engine families.

* * * * *

(b)* * *

(1) Class I-A--engines less than 66 cc in displacement,

(2) Class I-B--engines equal to or greater than 66 cc but less than 100 cc in displacement,

(3) Class I--engines equal to or greater than 100 cc but less than 225 cc in displacement,

* * *

* * * * *

10. Section 90.119 is proposed to be amended by revising paragraphs (a)(1)(i) and (ii) to read as follows:

§ 90.119 Certification procedure--testing.

(a) * * *

(1) * * *

(i) Class I, I-B, and II engines must use * * *

(ii) Class I-A, III, IV, and V engines must use * * *

* * * * *

Subpart C - Certification Averaging, Banking, and Trading Provisions

11. Section 90.203 is proposed to be amended by revising paragraph (f) to read as follows:

§ 90.203 General provisions.

* * * * *

(f) No Phase 2 engine family may have a HC + NO_x FEL that is greater than * * *, 94 g/kW-hr for Class I-A engines, 50 g/kW-hr for Class I-B engines, * * *, 300 g/kW-hr for Class III engines, 246 g/kW-hr for Class IV engines, or 166 g/kW-hr for Class V engines.

* * * * *

12. Section 90.204 is proposed to be amended by deleting the word “nonhandheld” in paragraph (b).

13. Section 90.205 is proposed to be amended by adding new paragraphs (a)(2), (4), (5) and (b)(3), (4), and (5) to read as follows:

§ 90.205 Banking.

(a) * * *

(2) Beginning with the 2000 model year, a manufacturer of a Class I-A or Class I-B engine family with an FEL below the applicable emission standard for a given model year may bank credits in that model year for use in averaging and trading.

(3) * * *

(4) Beginning with the 2002 model year, a manufacturer of a Class III or Class IV engine family with an FEL below the applicable emission standard for a given model year may bank credits in that model year for use in averaging and trading.

(5) Beginning with the 2004 model year, a manufacturer of a Class V engine family with an FEL below the applicable emission standard for a given model year may bank credits in that model year for use in averaging and trading.

* * * * *

(b) * * *

(3) Beginning with the 2000 model year and prior to the applicable date listed in paragraph (a) of this section for Class III engines, a manufacturer may bank early credits for all Class III engines with HC+NO_x FELs below 226 g/kW-hr. All early credits for Class III engines shall be calculated against a HC+NO_x level of 226 g/kW-hr.

(4) Beginning with the 2000 model year and prior to the applicable date listed in paragraph (a) of this section for Class IV engines, a manufacturer may bank early credits for all Class IV engines with HC+NO_x FELs below 187 g/kW-hr. All early credits for Class IV engines shall be calculated against a HC+NO_x level of 187 g/kW-hr.

(5) Beginning with the 2000 model year and prior to the applicable date listed in paragraph (a) of this section for Class V engines, a manufacturer may bank early credits for all

Class V engines with HC+NO_x FELs below 131 g/kW-hr. All early credits for Class V engines shall be calculated against a HC+NO_x level of 131 g/kW-hr.

* * * * *

14. Section 90.207 is proposed to be amended by revising paragraph (a) to read as follows:

§ 90.207 Credit calculation and manufacturer compliance with emission standards.

(a) * * *

Load Factor = * * * for Test Cycle A and Test Cycle B, and 85 percent (i.e., 0.85) for Test Cycle C. * * *

* * * * *

Subpart D--Emission Test Equipment Provisions

15. Section 90.301 is proposed to be amended by revising the first and second sentences of paragraph (d) to read as follows:

§ 90.301 Applicability.

* * * * *

(d) For Phase 2 Class I, Phase 2 Class I-B, and Phase 2 Class II natural gas fueled engines, * * *. * * * from Phase 2 Class I, Phase 2 Class I-B, and Phase 2 Class II natural gas fueled engines. * * *

Subpart E--Gaseous Exhaust Test Procedures

16. Section 90.401 is proposed to be amended by revising the first and second sentences of paragraph (d) to read as follows:

§ 90.401 Applicability.

* * * * *

(d) For Phase 2 Class I, Phase 2 Class I-B, and Phase 2 Class II natural gas fueled engines, * * *. * * * from Phase 2 Class I, Phase 2 Class I-B, and Phase 2 Class II natural gas fueled engines. * * *

17. Section 90.404 is proposed to be amended by revising the second, fourth, fifth, and sixth sentences of paragraph (b) to read as follows:

§ 90.404 Test procedure overview.

* * * * *

(b) * * * For Phase 2 Class I-B, Class I, and Class II natural gas fueled engines * * *. * * * Two cycles exist for Class I-B, I and II engines and one is for Class I-A, III, IV, and V engines (see § 90.103(a) and § 90.116(b) for the definitions of Class I-A, I-B, and I - V engines). The test cycles for Class I-B, I and II engines consist of * * *. The test cycle for Class I-A, III, IV, and V engines consists of * * *. * * *

* * * * *

18. Section 90.408 is proposed to be amended by revising the table in paragraph (b)(2) to read as follows:

§ 90.408 Pre-test procedure.

* * * * *

(b) * * *

(2) * * *

Engine Class	Test Cycle	Operating Mode
I, I-B, II	* * *	* * *
I, I-B, II	* * *	* * *
I-A, III, IV, V	* * *	* * *

* * * * *

19. Section 90.409 is proposed to be amended by revising the third sentence of paragraph (a)(3) and paragraph (b)(6) to read as follows:

§ 90.409 Engine dynamometer test run.

(a) * * *

(3) * * * For Phase 2 Class I, Phase 2 Class I-B, and Phase 2 Class II engines equipped

with an engine speed governor, * * *

* * * * *

(b) * * *

(6) For Class I, I-B, and II engines, * * *

* * * * *

20. Section 90.410 is proposed to be amended by revising paragraph (a), the first and third sentences of paragraph (b), and the first sentence of paragraph (c) to read as follows:

§ 90.410 Engine test cycle.

(a) Follow the appropriate 6-mode test cycle for Class I, I-B and II engines and 2-mode test cycle for Class I-A, III, IV, and V engines * * *

(b) For Phase 1 engines and Phase 2 Class I-A, III, IV, and V, and Phase 2 Class I and II engines not equipped with an engine speed governor, * * *. * * * For Phase 2 Class I, I-B, and II engines equipped with an engine speed governor, * * *. * * *

(c) If the operating conditions specified in paragraph (b) of this section for Class I, I-B, and II engines using Mode Points 2, 3, 4, and 5 cannot be maintained, * * *

* * * * *

21. Appendix A to Subpart E of Part 90 is proposed to be amended by revising Table 2 to read as follows:

Appendix A to Subpart E of Part 90 --Tables

* * * * *

Table 2. Test Cycles for Class I-A, I-B, and Class I-V Engines

Mode	1	2	3	4	5	6	7	8	9	10	11
Speed	Rated Speed					Intermediate Speed					Idle
Mode Points						***	***	***	***	***	***
A Cycle											
Load Percent -						***	***	***	***	***	***
A Cycle											
Weighting						***	***	***	***	***	***
Mode Points	***	***	***	***	***						***
B Cycle											
Load Percent -	***	***	***	***	***						***
B Cycle											
Weighting	***	***	***	***	***						***
Mode Points	***										***
C Cycle											
Load Percent -	***										***
C Cycle											
Weighting for Phase 1 Engines	90%										10%

Weighting for Phase 2 Engines	85%											15%
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Subpart H - Manufacturer Production Line Testing Program

22. Section 90.701 is proposed to be amended by adding the words “handheld and” immediately preceding the word “nonhandheld” in paragraph (a).

Subpart K--Prohibited Acts and General Enforcement Provisions

23. Section 90.1003 is proposed to be amended by revising the first sentence of paragraph (b)(6)(i) and adding a new third sentence, by revising the first and second sentences of paragraph (b)(6)(ii) and adding a new fourth sentence, by revising the first sentence of (b)(6)(iii) and adding a new second sentence, and by adding a new paragraph (b)(7) to read as follows:

§ 90.1003 Prohibited acts.

(b) * * *

(6)(i) Regulations elsewhere in this part notwithstanding, for three model years after the phase-in of each set of Class I through Class V Phase 2 standards; i.e. through August 1, 2010 for Class I engines, through model year 2008 for Class II engines, through model year 2009 for Class III and Class IV engines, and through model year 2011 for Class V engines, small volume equipment manufacturers as defined in this part * * *. * * * These provisions do not apply to Class I-A and Class I-B engines.

(ii) Regulations elsewhere in this part notwithstanding, for the duration of the Phase 2 rule in this part, equipment manufacturers that produce small volume equipment models, as defined in this part, for a Class I model in production prior to August 1, 2007, or a Class II model in production prior to the 2001 model year, or a Class III or Class IV model in production prior to the 2002 model year, or a Class V model in production prior to the 2004 model year, may continue to use in that small volume equipment model, and engine manufacturers may continue to supply, * * *. * * * to power the small volume equipment model. * * * These provisions do

not apply to Class I-A and Class I-B engines.

(iii) * * * for Class I engines, through the 2006 model year for Class II engines, through the 2007 model year for Class III and Class IV engines, and through the 2009 model year for Class V engines, subject to the following criteria. These provisions do not apply to Class I-A and Class I-B engines.

* * * * *

(7) Actions for the purpose of installing or removing altitude kits and performing other changes to compensate for altitude change as described in the application for certification pursuant to § 90.107(d) and approved at the time of certification pursuant to § 90.108(a) are not considered prohibited acts under § 90.1003(a).

* * * * *

Subpart L-- Emission Warranty and Maintenance Instructions

24. Section 90.1103 is proposed to be amended by adding new second and third sentences to paragraph (a) to read as follows:

§ 90.1103 Emission warranty, warranty period.

(a) * * * Manufacturers of handheld engines subject to Phase 2 standards may apply to the Administrator for approval for a one year warranty period for handheld engines that are subject to severe service in seasonal equipment and are likely to run their full useful life hours in one year. Such an application must be made prior to certification.

* * * * *

Subpart M - Voluntary In-Use Testing

25. Section 90.1201 is proposed to be amended by adding the words “handheld and” immediately preceding the word “nonhandheld” in the introductory paragraph.